DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 69.28

WELDING INSPECTION REPORT

Resident Engineer: Pursell, Gary
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-015427
Date Inspected: 03-Jul-2010

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island

OSM Arrival Time: 1900
OSM Departure Time: 700
Location: Shanghai, China

CWI Name:	See Below	**CWI Present:**	☑ Yes ☐ No
Inspected CWI report:	☐ Yes ☑ No ☐ N/A	**Rod Oven in Use:**	☑ Yes ☐ No ☐ N/A
Electrode to specification:	☑ Yes ☐ No ☐ N/A	**Weld Procedures Followed:**	☑ Yes ☐ No ☐ N/A
Qualified Welders:	☑ Yes ☐ No ☐ N/A	**Verified Joint Fit-up:**	☐ Yes ☑ No ☐ N/A
Approved Drawings:	☑ Yes ☐ No ☐ N/A	**Approved WPS:**	☑ Yes ☐ No ☐ N/A
		Delayed / Cancelled:	☐ Yes ☑ No ☐ N/A

Bridge No: 34-0006
Component: OBG

Summary of Items Observed:

CWI Inspectors: Mr. Wu Shi Gao, Mr. Lv Li Qing, Mr Xu Tao

On this date CALTRANS OSM Quality Assurance (QA) Inspector, Mr. Paul Dawson, arrived on site at the Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai China, for the purpose of monitoring welding and fabrication of the San Francisco / Oakland Bay Bridge (SFOBB) components. This QA Inspector observed the following:

OBG Bay 5

Earlier today ZPMC presented QA personnel with “Notification of Witness Inspection” document number 6113 that stated ZPMC was requesting Caltrans to perform visual and magnetic particle (MT) inspections of various welds on eight traveler rails in OBG bay 5. This QA Inspector performed random visual and magnetic particle (MT) inspections of welds 20TR2-011-09, 11, 13, 15, 17; 20TR2-003-09, 11, 13, 15, 17; and 20TR2-008-09, 11, 13, 15, 17. Items observed by this QA Inspector appeared to comply with AWS D1.5 MT requirements. For additional information on these inspections see this QA Inspector’s TL6028 Magnetic Particle Test Report. Caltrans QA Inspectors Mr. Ken Riley and Mr. Mike Hasler also performed MT and visual inspections of other traveler rails welds in OBG Bay 5.

OBG Bay 14

This QA Inspector observed ZPMC welder Mr. Liu Zipei, stencil 062406 was using submerged arc welding

procedure WPS-B-T-2221-B-U3C-S-2 to make OBG segment 13AE weld BP3032-001-004 between plates PL3220C and PL3221C. This QA Inspector observed ZPMC QC personnel monitoring this welding and this QA Inspector measured a welding current of approximately 680 amps and 33.0 volts. Mr. Liu Zipei appeared to be certified to make this weld and the base material was preheated with electric heating elements. Items observed by this QA Inspector appeared to be progressing in compliance with project specifications.

This QA Inspector observed ZPMC welder Mr. Liu Yong Sheng, stencil 055483 has used shielded metal arc welding process to make tack welds on East Anchor Plate Bearing Stiffener Plates SA3354F and X4743F. This QA Inspector observed Mr. Liu Yong Sheng appeared to be certified to make these tack welds. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Liu Dung, stencil 046467 was using shielded metal arc procedure WPS-B-P-2112-FCM-1 to make OBG segment 13BE stiffener plate tack weld RS3185W. This QA Inspector observed Mr. Liu Dung appeared to have used a torch to preheat the base material prior to welding and Mr. Liu Dung appeared to be certified to make this weld. This QA Inspector observed a welding current of approximately 180 amps. This QA Inspector measured the base material within 75 mm of where this tack weld was made to have a temperature of approximately 35 degrees Celsius. This QA Inspector asked ZPMC QC Inspector Mr. Wang Xu to come to where this welding was being performed and this QA Inspector asked Mr. Wang Xu what was the minimum required base material preheat for this welding. ZPMC QC Inspector Mr. Wang Xu informed this QA Inspector that the minimum preheat temperature is 110 degrees Celsius. This QA Inspector and ZPMC QC Inspector Mr. Wang Xu then looked at shielded metal arc procedure WPS-B-P-2112-FCM-1 and Mr. Wang Xu then said the minimum preheat temperature is 40 degrees Celsius and that he will inform ZPMC welder Mr. Liu Dung to be sure to preheat the base material prior to making additional tack welds. Items observed on this date did not fully appear to comply with applicable contract documents.

This QA Inspector observed ZPMC welder Ms. Hue Junrong, stencil 201215 was using flux cored welding procedure WPS-B-T-2232-TC-U4b-F to make OBG segment 12AW weld SEG3004H-256 near panel point PP111. This QA Inspector measured a welding current of approximately 290 amps and 30.0 volts and Ms. Hue Junrong appeared to be certified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents.

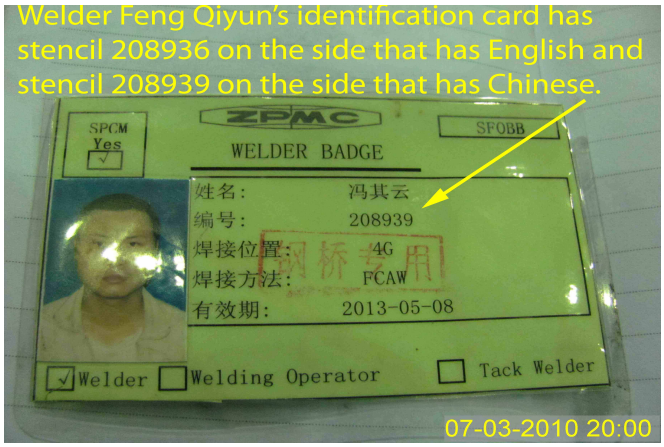
This QA Inspector observed ZPMC welder Mr. Wang Chang Ming, stencil 047864 was using shielded metal arc welding procedure specification WPS-B-P-2233-TC-U4b-F to complete OBG segment 12AW weld SEG3004J-252 near panel point PP111. This QA Inspector observed a welding current of approximately 155 amps, the base material was preheated with a torch prior to welding and Mr. Wang Chang Ming appeared to be certified to make this weld. This QA Inspector observed the welding electrodes were stored in a portable electrode storage oven that was warm to the touch. Items observed on this date appeared to generally comply with applicable contract documents.

OBG Bay 19

This QA Inspector observed ZPMC welder Mr. Feng Qi Yun, stencil 208939 was using flux cored welding procedure WPS-B-T-2334-TC-P4-F to make bikepath weld BK004A6-004-098. This QA Inspector measured a welding current of approximately 270 amps and 30.0 volts. This QA Inspector observed the welder identification

card that was issued by ZPMC lists Feng Qi Yun's name in the Chinese language to have a stencil number of 208939 and side of the welder identification card that is written in English lists Feng Qi Yun as having a stencil number of 208939. ZPMC CWI Mr. Xu Tao informed this QA Inspector that the correct stencil number for Feng Qi Yun is 208939 and the 208936 number is incorrect. Mr. Xu Tao informed this QA Inspector that he will contact ZPMC management personnel of this error. The base material appeared to have been preheated with a torch prior to welding and Mr. Feng Qi Yun appeared to be certified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents. See the photographs below for additional information.

This QA Inspector observed ZPMC welder Mr. Tang Hai Jun, stencil 208641 was using flux cored welding procedure WPS-B-T-2334-TC-P4-F to make bikepath weld BK004A8-004-078. This QA Inspector measured a welding current of approximately 260 amps and 39.0 volts. This QA Inspector observed the base material appeared to have been preheated with a torch prior to welding and Mr. Tang Hai Jun appeared to be certified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents.



Summary of Conversations:

See Above.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Eric Tsang phone: 150-0042-2372 , who represents the Office of Structural Materials for your project.

Inspected By:	Dawson,Paul	Quality Assurance Inspector
Reviewed By:	Carreon,Albert	QA Reviewer